SLOVENSKI STANDARD
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Nizkonapetostne električne inštalacije - 7-730. del: Zahteve za posebne inštalacije ali lokacije - Kopenske naprave za napajanje plovil za celinske vode

Low-voltage electrical installations - Part 7-730: Requirements for special installations or locations - Onshore units of electrical shore connections for inland navigation vessels

Errichten von Niederspannungsanlagen - Teil 7-730: Anforderungen für Betriebsstätten, Räume und Anlagen besonderer Art - Elektrischer Landanschluss für Fahrzeuge der Binnenschifffahrt

Installations électriques à basse tension - Partie 7-730: Exigences pour les installations et emplacements spéciaux - Unités à terre des connexions au réseau électrique terrestre pour les bateaux de navigation intérieure

Ta slovenski standard je istoveten z: **prHD 60364-7-730**

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HARMONIZATION DOCUMENT

DOCUMENT D'HARMONISATION

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prHD 60364-7-730

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ICS 47.020.60

Will supersede HD 60364-7-730:2015 and all of its amendments and corrigenda (if any)

English Version

Low-voltage electrical installations - Part 7-730: Requirements for special installations or locations - Onshore units of electrical shore connections for inland navigation vessels

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This draft Harmonization Document is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2021-07-23.

It has been drawn up by CLC/TC 64.

If this draft becomes a Harmonization Document, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

This draft Harmonization Document was established by CENELEC in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a Harmonization Document. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a Harmonized Document.

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (prHD 60364-7-730:2021) has been prepared by CLC/TC 64 “Electrical installations and protection against electric shock”.

This document is currently submitted to the Enquiry.

The following dates are proposed:

• latest date by which the existence of this document has to be announced at national level	(doa)	dor + 6 months
• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	dor + 12 months
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	dor + 36 months (to be confirmed or modified when voting)

This document will supersede HD 60364-7-730:2015 and all of its amendments and corrigenda (if any).

Introduction

For the purpose of this part, the requirements of the general Parts 1 to 6 and parts 8 of HD 60364 apply.

The 7XX parts of publication HD 60364 contain particular requirements for special installations or locations which are based on the requirements of the general parts of HD 60364 (parts 60364-1 to 60364-6 and parts 8). These 7XX parts are expected to be considered in conjunction with the requirements of the general parts.

The particular requirements of this part of HD 60364 supplement, modify or replace certain requirements of the general parts of HD 60364 being valid at the time of publication of this part. The absence of reference to the exclusion of a part or a clause of a general part means that the corresponding clauses of the general part are applicable (undated reference).

Requirements of other 7XX parts being relevant for installations covered by this part also apply. This part could therefore also supplement, modify or replace certain of these requirements valid at the time of publication of this part.

The clause numbering of this part follows the pattern and corresponding references of HD 60364. The numbers following the particular number of this part are those of the corresponding parts, or clauses of HD 60364 being valid at the time of publication of this part as indicated in the normative references of this document (dated reference).

If additional requirements or explanations are needed which have no direct relation to general parts or other 7XX parts the numbering of such clauses are stated as 7XX.101, 7XX.102, 7XX.103 etc.

NOTE In the case where new or amended general parts with modified numbering were published after this part was issued, the clause numbers referring to a general part in this 7XX part might no longer align with the latest edition of the general part. Dated references are expected to be observed.

730 On-shore units of electrical shore connections for inland navigation vessels

730.1 Scope

The particular requirements specified in this part of HD 60364 apply to on-shore installations dedicated to supply inland navigation vessels for commercial and administrative purpose, berthed in ports and berths.

For single- and three-phase supplies to pleasure craft, use HD 60364-7-709.

This document applies to the electric installations specified in EN 15869-1, EN 15869-2 and EN 16840.

Additional requirements which are not related to electrical requirements are given in EN 15869-1, EN 15869-2 and EN 16840.

The particular requirements do not apply to the on-board installations of inland navigation vessels, including the shore-connection cables. Additional requirements on the on-board installation are given in EN 15869-3.

730.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15869-2, *Inland navigation vessels - Electrical shore connection, three phase current 400 V, 50 Hz, up to 125 A - Part 2: On-shore unit, additional requirements*

EN 16840, *Inland navigation vessels - Electrical shore connection, three-phase current 400 V, 50 Hz, at least 250 A*

EN 60309-1, *Plugs, socket-outlets and couplers for industrial purposes - Part 1: General requirements* (IEC 60309-1)

EN 60309-2, *Plugs, socket-outlets and couplers for industrial purposes - Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories (IEC 60309-2)*

EN 60309-4, *Plugs, socket-outlets and couplers for industrial purposes - Part 4: Switched socket-outlets and connectors with or without interlock (IEC 60309-4)*

EN 61558-2-4, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers (IEC 61558-2-4)*

EN 61984, *Connectors - Safety requirements and tests (IEC 61984)*

730.3 Terms and definitions

For the purposes of this document, the following term and definition apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

730.3.1
inland navigation vessel
vessel used for commercial or administrative purposes navigating on inland waterways

730.31 Purposes, supplies and structure

730.312 Conductor arrangement and system earthing

730.312.2 Types of system earthing

Add the following:

NOTE As stated in the Annex II of European Directive (EU) 2016/1629, the following systems are allowed for a.c. three-phase current on board inland navigation vessels: TN-S, TT, IT.

730.313 Supplies

Add the following:

730.313.1.101

The nominal supply voltage (supplied from the transformer station) shall be 400 V three-phase a.c., 50 Hz.

An arrangement diagram of an electrical shore connection is shown in EN 15869-1, and an overview diagram of an electrical power-supply station with two connector units is shown in EN 15869-2.

730.313.1.102 Galvanic separation

Where an on-shore isolating transformer is used for the shore connection in order to prevent galvanic currents between the vessel's hull and the metal parts of the shore, this isolating transformer shall be in accordance with EN 61558-2-4.

The protective conductor (PE) of the supply to the isolating transformer shall not be connected to the earth terminal in the socket-outlet supplying the inland navigation vessel.

730.4 Protection for safety

730.41 Protection against electric shock

730.410.3.5

Replacement:

The protective measures specified in HD 60364-4-41:2007, Annex B shall not be used:

— obstacles;

— placing out of reach.

730.410.3.6

Replacement:

The protective measures specified in HD 60364-4-41:2007, Annex C shall not be used:

— non-conducting location;

— earth-free local equipotential bonding.

730.5 Selection and erection of electrical equipment

730.512 Operational conditions and external influences

730.512.2 External influences

Add the following:

730.512.2.101 Degree of protection

Equipment shall be selected in such a way that the electrical system assembled with it achieves a degree of protection of IP54.

730.521 Types of wiring systems

Add the following:

730.521.101 Wiring systems of berths, ports and floating landing stages

730.521.101.1 Berths and ports

The following wiring systems and cables are suitable for distribution circuits in berths and ports:

a) underground cables;

b) overhead cables;

c) cables with copper conductors and thermoplastic or elastomeric insulation and installed within an appropriate cable management system taking into account external influences such as movement, impact, corrosion and ambient temperature;

d) mineral-insulated cables with thermoplastic protective covering;

e) armoured cables with a thermoplastic or elastomeric covering.

Other cables and materials that are at least as suitable as those listed under a), b), c), d) or e) may be used.

730.521.101.2 Floating landing stages

Wiring systems and cables shall be suitable for the movement of floating landing stages. The following wiring systems and cables are suitable for distribution circuits on floating landing stages:

a) cables with copper conductors and thermoplastic or elastomeric insulation and installed within an appropriate cable management system taking into account external influences such as movement, impact, corrosion and ambient temperature;

b) armoured cables with a thermoplastic or elastomeric covering.

Other cables and materials that are at least as suitable as those listed under a) or b) may be used.

730.521.101.3 Cables and cable management systems

730.521.101.3.1 General

Cables and cable management systems shall be selected and installed so that mechanical damage due to tidal and other movement of floating structures is prevented.

Cable management systems shall be installed to allow the drainage of water/condensate e.g. by sloping way and/or drainage holes.

730.521.101.3.2 Underground cables

Underground distribution circuits shall, unless provided with additional mechanical protection, be buried at a sufficient depth to avoid being damaged, e.g. by movement of vehicles.

NOTE 1 A depth of 0,6 m is generally considered as a minimum depth to fulfil this requirement.

NOTE 2 For conduit systems buried underground, see EN 61386-24.

730.521.101.3.3 Overhead cables

Overhead cables shall not be used over waterways.

Poles and other supports for overhead wiring shall be located or protected so that they are unlikely to be damaged by any foreseeable movement of vehicles.

Overhead cables shall be at a height above ground of not less than 6 m in all areas subjected to movement of vehicles and 3,5 m in all other areas.

Any overhead conductors shall be insulated.

730.53 [1)] Isolation, switching and control

730.531 Devices for protection against indirect contact by automatic disconnection of supply

730.531.2 Residual current protective devices (RCDs)

Add the following:

Socket-outlets with a rated current up to 63 A shall be individually protected by an RCD having a rated residual operating current not exceeding 30 mA. The RCD selected shall disconnect all live conductors, i.e. phases and neutral.

Socket-outlets with a rated current of more than 63 A up to 125 A shall be individually protected by an RCD having a rated residual operating current not exceeding 300 mA. The RCD selected shall disconnect all live conductors, i.e. phases and neutral.

Single-core socket-outlets with a rated current above 125 A shall have a shore connection monitoring e.g. according to EN 16840.

730.533 Devices for protection against overcurrent

Add the following:

Socket-outlets shall be individually protected by an overcurrent protective device.

1) The numbering 730.531, 730.531.2 and 730.533 and the absence of references on Clauses 53... refer to IEC 60364-5-53:2002 as at CENELEC level no Chapter 53 exists. At CENELEC level,

- HD 384.4.46 S2:2001 is valid instead of Clause 536 of IEC 60364-5-53:2001;
- HD 384.5.537 S2:1998 is valid instead of 536.2.2 and 536.3.2 of IEC 60364-5-53:2001;
- HD 60364-5-534:2008 is valid instead of Clause 534 of IEC 60364-5-53:2001/A1:2002.

IEC 60364-5-53:2002 (edition 3.1) is a consolidated edition consisting of IEC 60364-5-53:2001 and A1:2002.